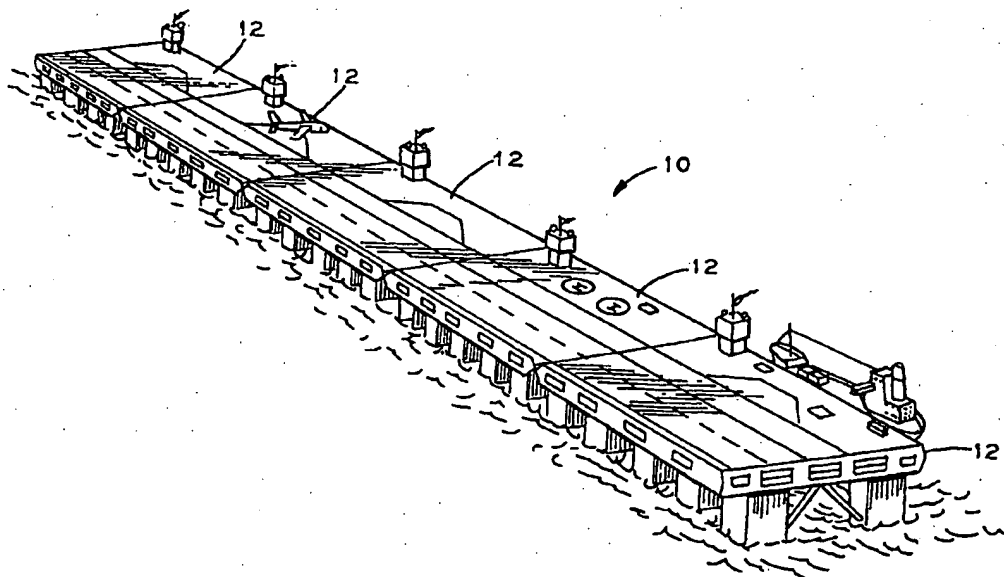


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(54) Title: MOBILE OFFSHORE BASE



(57) Abstract

A mobile offshore base (10) is formed from several individual single base units (12) that are connected together at sea to form the complete base. The complete base (10) forms a runway and support base for fixed wing and rotary wing aircraft and also provides space for stowage and transport of equipment and personnel. The single base units (12) are similar semi-submersible units that are linked together by hinges and/or U-joints to form the complete mobile offshore base (10). Each single base unit (12) is self-propelled and is also capable of independent operations at widely separated locations. The single base units are each formed from lower hulls, columns that extend upward from the lower hulls, and an upper hull attached to the columns.

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MOBILE OFFSHORE BASE

BACKGROUND OF THE INVENTION5 1. Field of the Invention

The invention is generally related to a military logistics base and more particularly to a mobile base offshore.

2. General Background

10 In military operations, in peace or war time, the maintenance and/or replacement of material and personnel requires a base of operations. Due to political situations, as well as limitations on availability of land, it has become increasingly difficult to maintain a military presence in areas of the world far from the home country. Also, maintaining a military base in
15 several different countries is prohibitively expensive when such bases may not all be needed on a full time basis. This leaves a need for some type of alternative base.

SUMMARY OF THE INVENTION

20 The invention addresses the above need. What is provided is a mobile offshore base. The mobile offshore base is formed from several individual single base units that are connected together at sea to form the complete base. The complete base forms a runway and support base for fixed wing and rotary wing aircraft and also provides space for stowage and transport of
25 equipment and personnel. The single base units are similar semi-submersible units that are linked together by hinges and/or U-joints to form the complete mobile offshore base. Each single base unit is self-propelled and is also capable of independent operations at widely separated locations. The single base units

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are each formed from lower hulls, columns that extend upward from the lower hulls, and an upper hull attached to the columns.

BRIEF DESCRIPTION OF THE DRAWINGS

For a further understanding of the nature and objects of the present invention reference should be made to the following description, taken in conjunction with the accompanying drawings in which like parts are given like reference numerals, and wherein:

Fig. 1 is a perspective view of a single base unit of the invention.

Fig. 2 is a typical transverse section of a single base unit of the invention.

Fig. 3 is a partial cutaway view of a single base unit of the invention.

Fig. 4 is a perspective view illustrating the single base units of the invention linked together to form a mobile base.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, it is seen in Fig. 4 that the invention is generally indicated by the numeral 10. Mobile offshore base 10 is formed from a number of single base units 12 that are connected together at sea. Each single base unit 12 is generally comprised of at least two buoyant lower hulls 14, columns 16, and upper hull 18.

As seen in Fig. 1 and 2, lower hulls 14 are preferably ship shaped (streamlined with symmetrically faired bow and stern shapes) to allow for movement at transit and operating speeds at the efficient power and propulsion capabilities. Propulsion and

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dynamic positioning thrusters are indicated by numeral 20.

A plurality of columns 16 rigidly attached to and spaced along the length of the lower hulls 14 extend upwardly therefrom. Columns 16 are illustrated as being square or rectangular in section but may be of any suitable shape.

Upper hull 18 is rigidly attached to the upper end of columns 16 adjacent outer opposing sides of upper hull 18 such that lower hulls are spaced across the width of the upper hull and are parallel to the longitudinal axis of the upper hull.

Bracing 22 rigidly attached between columns 16 and upper hull 18 provides support to minimize flexing and maintain spacing between the lower hulls 14. Upper hull 18 is sized and constructed to form an upper deck 24 and, in the configuration illustrated, three lower decks 26. Upper deck 24 serves as an aircraft runway and landing area for fixed and rotary wing aircraft as well an apron for loading and unloading the aircraft. Lower decks 26 are used for living space and storage space for equipment and supplies. Fig. 3 illustrates loading and storage capabilities.

Each single base unit 12 is provided with variable ballast tanks 28 in lower hulls 14 and columns 16. Variable ballast tanks 28 provide for operation as a semi-submersible vessel to selectively allow operation at different drafts. At transit draft, the hulls 14 are at their shallowest draft and allow for top speed. At operational draft, illustrated in Fig. 4, lower hulls 14 are fully submerged below the water surface to provide, relative to transit draft, a smaller water plane area through hull that greatly reduces pitch, roll, and heave in response to

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wave action. Survival draft is selected during storms. Variable ballast tanks 28 are operated to receive or expell water ballast in a manner well known in the art.

In operation, each single base unit 12 may be used
5 individually or one or more may be connected together as
illustrated in Fig. 4 to form a mobile offshore base suitable for
receiving fixed and rotary wing aircraft. In this configuration,
the connected units are preferably ballasted to an operational
draft as illustrated to minimize motions from waves. For the
10 purposes of forming a mobile offshore base using five individual
units 12, as well as having usable individual units, each
individual unit 12 is designed to be three hundred meters in
length, one hundred fifty-two meters in breath at the flight
deck, and seventy-five point six meters tall. For these
15 dimensions, each lower hull 14 is two hundred seventy meters
long, thirty-eight meters wide, and sixteen meters tall, with
symetrically faired bow and stern shapes. Depending upon the
payload, the transit draft is expected to be between thirteen and
fourteen meters. The operational draft is expected to be thirty-
20 eight meters and the survival draft is expected to be thirty-five
meters. Special marine connectors 30, seen in Fig. 1, are used
to connect the units by means of hinges and/or U-joints. Special
connectors are required due to the large loads encountered. Such
special connectors are the subject of copending application
25 Serial Number 08/XXX,XXX filed July 31, 1997.

Because many varying and differing embodiments may be made
within the scope of the inventive concept herein taught and

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because many modifications may be made in the embodiment herein detailed in accordance with the descriptive requirement of the law, it is to be understood that the details herein are to be interpreted as illustrative and not in a limiting sense.

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What is claimed as invention is:

1. A floating mobile offshore base, comprising a plurality of single base units connected together, each of said single base units comprising:

- 5 a. at least two buoyant lower hulls;
- b. a plurality of columns spaced along the length of said lower hulls and extending upward therefrom; and
- c. an upper hull attached to the upper end of said columns such that said lower buoyant hulls are spaced
- 10 across the width of said upper hull and each of said lower hulls extends substantially parallel to the longitudinal axis of said upper hull.

2. The mobile offshore base of claim 1, wherein said single base units are connected together to form an aircraft runway and

15 apron.

3. The mobile offshore base of claim 1, wherein the draft of each of said single base units is selectively adjustable.

4. The mobile offshore base of claim 1, wherein said single base units are connected together end to end.

20 5. The mobile offshore base of claim 1, wherein said single base units are self-propelled.

6. A floating mobile offshore base, comprising a plurality of self-propelled single base units connected together to form an aircraft runway and apron, each of said single base units

25 comprising:

- a. at least two buoyant lower hulls;
- b. a plurality of columns spaced along the length of

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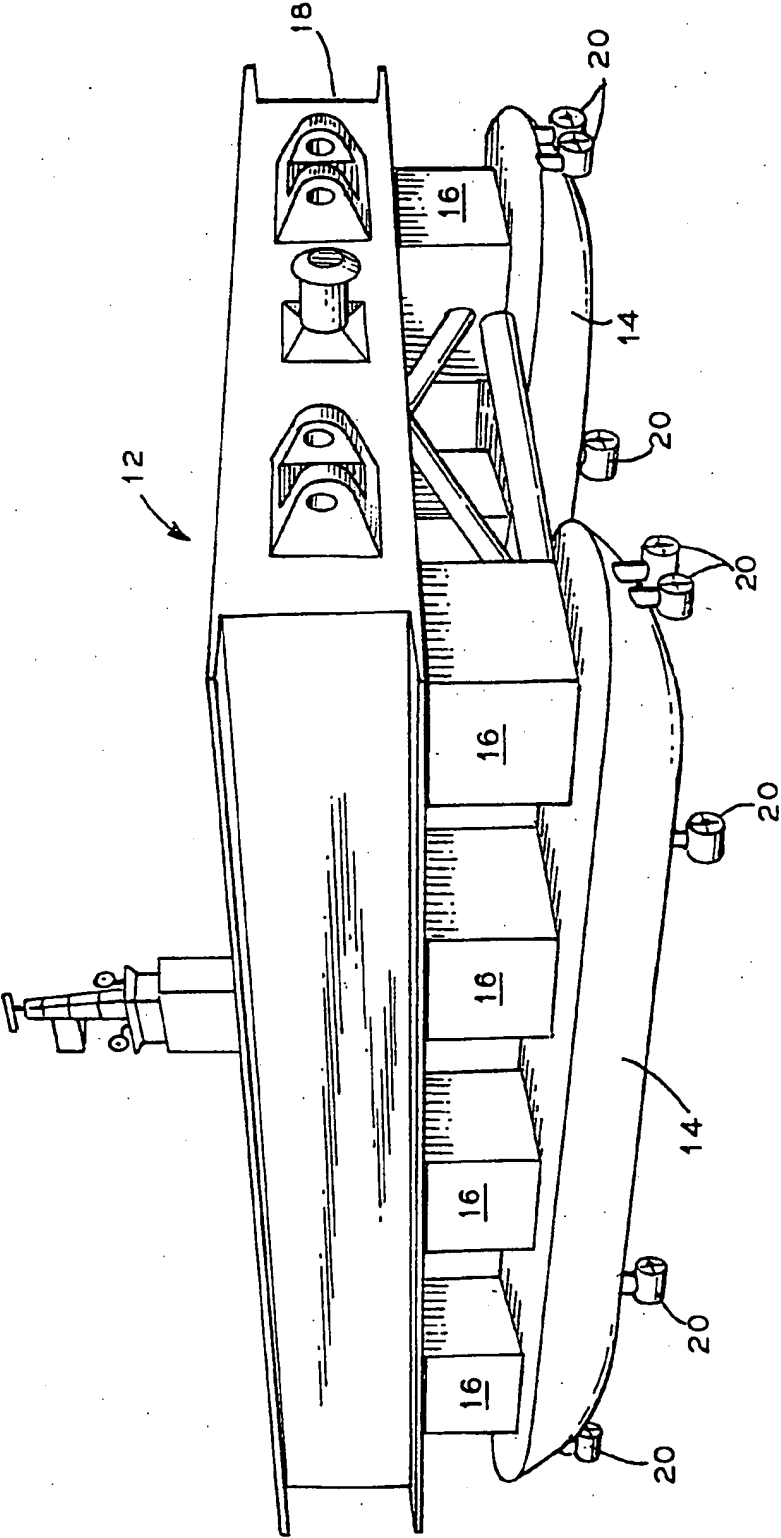
said lower hulls and extending upward therefrom; and

c. an upper hull attached to the upper end of said columns such that said lower buoyant hulls are spaced across the width of said upper hull and each of said lower hulls extends substantially parallel to the longitudinal axis of said upper hull.

7. The mobile offshore base of claim 6, wherein the draft of each of said single base units is selectively adjustable.

8. The mobile offshore base of claim 6, wherein said single base units are connected together end to end.

FIG. 1



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FIG. 2

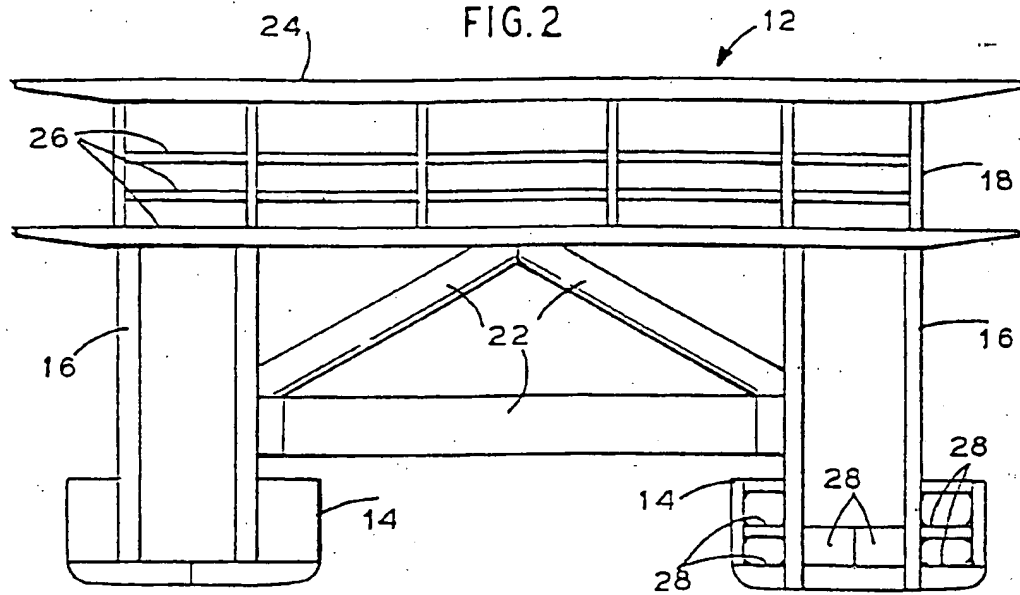


FIG. 3

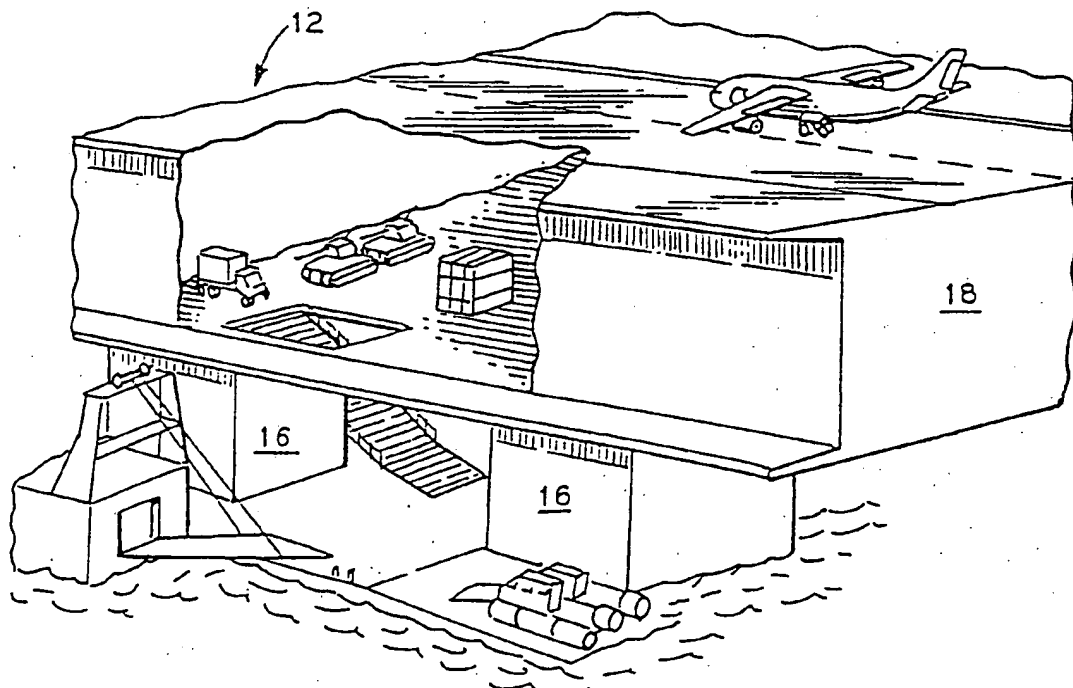
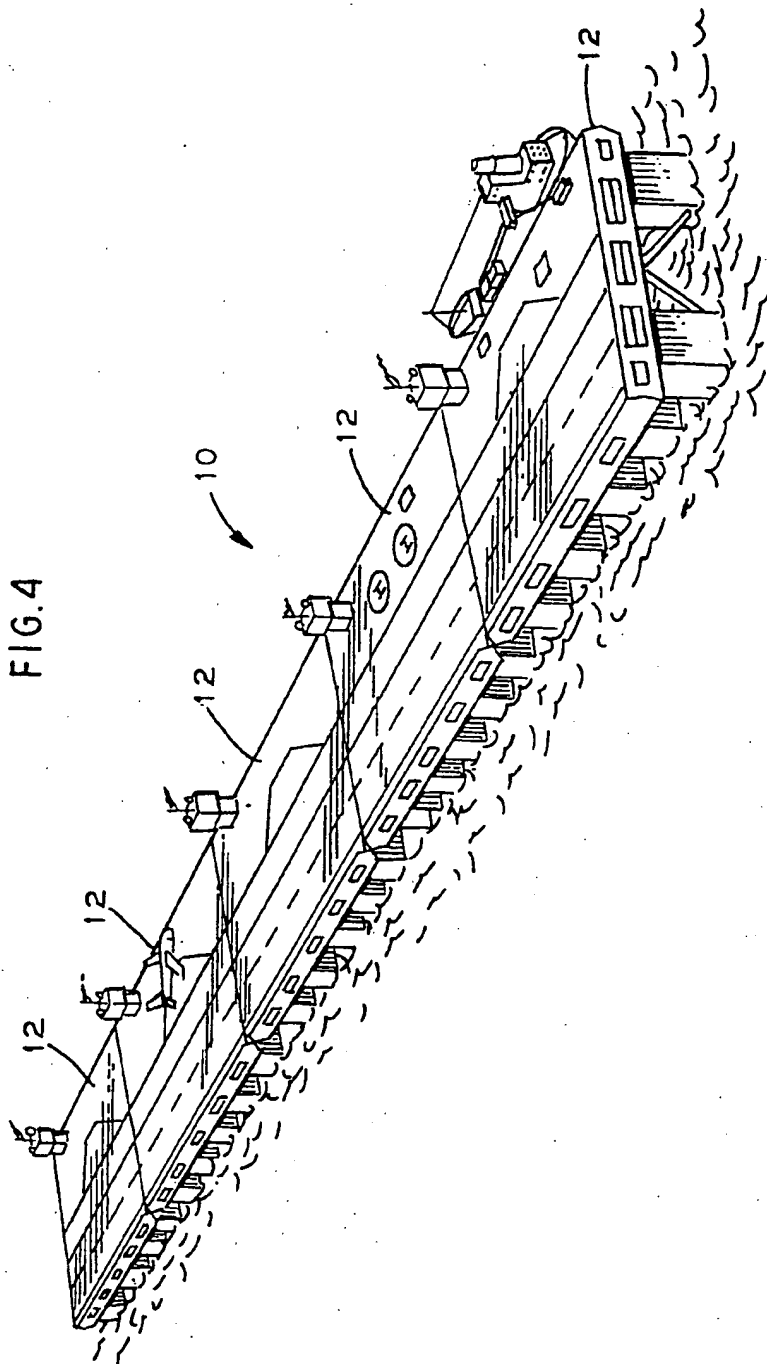


FIG. 4



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/14718

A. CLASSIFICATION OF SUBJECT MATTER IPC(6) : B63B 35/44, 50 US CL : 114/261 According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 114/261.265 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched none Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) none				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Y	US 1,854,336 A (KING) 19 APRIL 1932 (19.04.32). See entire document.	1-7		
Y	US 2,399,611 A (ARMSTRONG) 07 MAY 1946 (07.05.46). See entire document.	1-7		
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<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.				
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